Hypermeter in *The Legend of Zelda: A Link to the Past*

by Ben Tibbetts

for Music 691R, Fall 2012, University of Mass. Amherst

Most of the video game music released in the late 20th century was designed for endless

repetition. Once the performance of a musical track by the video game console came to an

apparent end, the machine was programmed to "loop", or re-perform the track from the

beginning. These short loops provided the aural basis for a continuous game experience.[1] This

paper looks at the hypermetrical qualities of loops in *The Legend of Zelda: A Link to the Past*[2]

(LTTP) by singling out for analysis musical segments from the soundtrack by Koji Kondo.[3]

Generally, Japanese composers writing soundtracks for early video games appeared to

have had a collective intuition: they tended to compose as if music which looped seamlessly was

more pleasurable than music which looped obviously, or abruptly. In most tracks, the re-

performance of opening material was disguised by musical introductions. These introductions

were to be performed only at the onset of a track's occurrence; rather than looping, they were

only heard again if and when that track began again at a later time. Occasionally, these

introductions were relatively elaborate, lasting as long as ten or twenty seconds.

The question of separating these introductions from sound effects—indeed, deciding

where all game music ends and where the sound effects begin—is a difficult one. One should

keep in mind that the music for these video games had to share all available channels with other

sound effects. So, during game play, sounds frequently cut in and out as others took precedence.[4]

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1   Alten, Stanley R.
2   Nintendo. *The Legend of Zelda: A Link to the Past*.
3   "Game Music: Koji Kondo: Biography", Square-Enix Music Online.
4   Moorman, Peter.

Many of these sounds were determined by a player's input, and, although this paper takes into account many of the introductions to looped music in LTTP, it can't describe the chance interactions between video game sound effects and music. Probably, music theory is incapable of predicting accurately how the sounds created by a player's input will interact with those performed without the player's input.

But, the music remains. In most parts of LTTP, a player may decide to pause the game or sit still; during this time, the music is played purely and without interruption. So, there is an ideal performance of the music in this game—whether or not it is realized in reality—and in this form, it may be analyzed.

This paper makes routine reference to "hypermeter" and "hypermeasures". When it does so, it is assuming a general understanding of "hypermeter" as Rothstein describes it in *Phrase Rhythm in Tonal Music*.[5] Generally, hypermeter in this sense refers to a combination of measures which may be grouped on a metrical basis. Since this music exists only as an aurally recorded phenomenon, and since the transcriptions used for this project are original to the author, there is no original representation of this music on print. For this reason, hypermeter in this sense also refers to a potential re-notation—four bars of 4/4 which comprise one hypermeasure could be re-notated in 4/1, etc. This paper also acknowledges Rothstein's understanding of hypermeter as an almost purely hierarchical phenomenon. Not only can measures be grouped into hypermeasures, but hypermeasures themselves may be grouped together to form still larger hypermeasures.

This paper also looks at the phenomenon of hypermetrical "reinterpretation" as it occurs in LTTP. By reinterpretation, it refers to the understanding of a single hypermetric beat as simultaneously belonging to two hypermeasures, which may be said to be "overlapping". This is

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5   Rothstein, William Nathan.

one technique of several established by McClelland for pointing out hypermetrical complexities in the music of Haydn.[6]

The transcriptions included here are notated like lead sheets: the melody is notated on a single staff; the harmonies are summarized in chord symbols above the staff, where a letter with no signs indicates a major quality, a minus sign (-) indicates a minor quality, etc. Lead sheet notation has been chosen for the following reasons: 1. It summarizes musical events, providing merely a basis for quickly ascertaining metrical and hypermetrical elements. 2. Kondo's musical background includes jazz and rock influences[7], and one guesses that, by using a style of notation designed specifically for describing these musical trends, some insight might be gained into his compositional approach.

This paper will examine twenty-two loops from LTTP, which represents a summation of looped musical material in the game. In considering which tracks to examine, two criteria were followed: 1. Overall, melodic material is essentially represented only once—alternate versions and orchestrations of a track already chosen were not considered. 2. Each track loops indefinitely. These criteria exclude, for instance, an alternate arrangement of the "saving the princess" theme, since that musical material is handled. They also exclude tracks like the Epilogue which, however lengthy, do not loop indefinitely. Their titles here are descriptive. They don't represent, or even necessarily resemble, official titles from an album.

When a player turns on the game, a short title screen appears. If left uninterrupted by player input, it transitions into a lengthy prologue sequence, during which a back story is explained and illustrated. The music for this prologue is shown in Example 1. The transition

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6   McClelland, Ryan.
7   "Game Music: Koji Kondo: Biography", Square-Enix Music Online.

from the title screen to the prologue is handled additively in the eight-measure introduction: there are low arpeggios, and tremolo violins are introduced at measure five. The looped portion begins at measure nine. In this Example, and henceforth, the re-notation of each hypermetric beat is marked by large-font numbers.

[Example 1 / Track 1][8]

A hypermeter, consisting of four-bar hypermeasures, is established. Measures nine through twenty-four may be interpreted as four hypermeasures. At measure twenty-five, the hypermeter is altered by the introduction of a 3/4 time signature. There, one may notice that the hypermeasures are still four bars each, but each bar (or "beat") is a little shorter. Four hypermeasures of this kind occur in measures twenty-five through forty. Then, the track loops back to measure nine.

In this, the opening loop of the game, there is an asymmetrical oscillation between an 4/4 and 3/4. The number of hypermeasures in each section is equal, but the length of the second is exactly ¾ the length of the first. For this reason, this loop may represent an emphasis on the number seven as an organizational force. If this seems a stretch, notice how easily it is shown arithmetically: there are sixty-four ordinary beats in the first section, and forty-eight in the second. In all, there are one hundred and twelve beats in he loop. Divide this by seven, and sixteen equal musical segments are revealed.

The player, however, is probably consciously unaware of such subtlety. Hitting the "START" button, he is taken to the select screen, where a decision must be made—begin a new game? load an old one? what to name the character? and so on. The music, shown in Example 2,

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8 Original recordings of these tracks in *.MP3 format, matching the example-number of each transcription, may be found at http://bentibbetts.net/storage/lttp/paper/.

is straightforward.

[Example 2]

The player begins a new game. A character is shown on the screen, snoring in his bed. In what we must assume are the character's dreams, a telepathic call is received—the princess is in danger! The character sits bolt upright and runs out into pouring rain to the music of Example 3.

[Example 3]

The 3/4 time signature has vanished, and so has any trace of a melody. A hypermeter is introduced in the four-bar introduction. Twelve bars repeat. Three four-bar hypermeasures are created. The player gradually becomes acclimated to the controls. Navigating through bushes and a moonlit courtyard, he breaks into a gigantic stone castle. The first extended dungeon sequence begins. The music for this section, shown in Example 4, is among the lengthiest loop in the game.

[Example 4]

There is a two-bar fanfare. In the third measure of the introduction, the hypermeter begins. The first four-bar hypermeasure lasts from measures three to six. The hypermeter remains constant. In measures forty-three to forty-six, the final beat of the hypermeasure is reinterpreted as the first beat of the first hypermeasure. Notice this compositional sleight-of-hand: it makes identifying the boundaries of the loop difficult.

The player spends an hour or more navigating this difficult area. Finally, the princess is discovered locked in the dungeon. There is a brief, ecstatic flourish. The princess's theme is introduced. In Example 5, this music has been transcribed without the flourish.

[Example 5]

There are six four-bar hypermeasures. These may be alternatively interpreted as three

eight-bar hypermeasures. The jazz influences are immediately apparent. One is reminded by the melodies and the harmonies of a jazz waltz. By the hypermetrical structure, one is reminded of a twelve-bar blues.

The player struggles with the long task of extricating the princess from the castle via a secret passage. Eventually, the princess and the character emerge into a sanctuary to the music in Example 6.

[Example 6]

There is a five measure introduction. The hypermeter begins at measure four. But, the harmonic accompaniment doesn't begin until measure six. This causes the third beat of the opening hypermeasure to be reinterpreted as the first beat of a new hypermeasure. Consequently, the fourth beat of the old is reinterpreted as the second of the new in measure seven. The loop takes place from measures six to seventeen.

The entry of the hypermeter in this track sounds false or deceptive. In this way, it resembles the horn player's famous "error" in *Eroica*.[9] One can make another classical reference: there is a sort of lament bass[10] is created by the chromatic descension from C to G. By disguising the beginning of the loop in measure six, Kondo makes less obvious the entry of this bass.

The player leaves the safety of the church and ventures outside. He emerges into the Light World, where much of the game takes place. This music, shown in Example 7, is one of several tracks in the LTTP soundtrack which cheerfully quotes music from earlier games in the *Zelda* franchise.[11][12]

[Example 7]

9   Kinderman, William.
10 Brover-Lubovsky, Bella.
11 Nintendo, *Zelda II: The Adventure of Link*.
12 Nintendo, *The Legend of Zelda*.

There is a four-bar fanfare, and a hypermeter is established. Measures five through eight, nine through twelve, and thirteen through sixteen continue the pattern of four-bar hypermeasures. In measures seventeen through twenty, an apparent continuation of the hypermeter takes place, but the harmonies may suggest something else: because there's no discernible harmonic movement here, one might interpret them as merely a prolongation of measure sixteen. In Example 7, this has been marked through the use of parenthesis and dashes. After apparent prolongation, measures twenty-one through twenty-four represent a truer continuation of the hypermeter. The track loops back to measure five. This general simplicity is surprising, given that the player will hear this loop many times. Doesn't his ear become tired by the repetition? Perhaps, but the music remains well-loved even outside the community of Zelda enthusiasts. One may speculate that familiarity does not, as the saying goes, breed contempt—rather, that it sometimes does work towards accomplishing the opposite.

The player is tasked with finding "Kakariko Village." There he will find both allies and helpful advice, as well as the music in Example 8.

[Example 8]

This is another waltz, but one with metrical complexities. There is a one-measure introduction. A hypermeter is established in the first four bars. There is an alternation between 3/4 and 6/8 time signatures which does not affect the hypermeter. The melody, too, seems unaffected by this bipolarity; only the accompanying string figures provides clues to the occasional shift in emphasis. In measure forty-nine the final hypermeasure begins, but it never completes—the fourth beat, or the last bar, is reinterpreted as the first beat of the initial hypermeasure. (Curious, the quiet sophistication of these peaceful villagers!)

At some point, the atmosphere is broken by the music in Example 9. A furious guard,

suddenly alerted to the location of the man "wanted for kidnapping the princess", suddenly runs

on-screen after the protagonist. A short, panicked introduction precedes a brief skirmish. Eight

bars are looped. Easily, one hears two hypermeasures at work—with a little imagination, the

entire track can easily be re-heard and -notated as one single hypermeasure.

[Example 9]

After triumphing over the guard, the player is told to venture eastward. There, the

villagers believe, a wise elder lives in hiding. The player does so, eventually entering an

underground hideout to the music in Example 10.

[Example 10]

Kondo once again displays his preference for depicting underground chasms through

minimal materials (an approach he also employed for the "cave" music in *Super Mario Bros.*[13]).

What variety exists here is provided through percussive elements. The sound effects are brought

to the foreground. Every sound takes on a reverberant, echoing quality. There is a four-bar

introduction. Except for a slight harmonic shift, it is indistinguishable from the body of the loop.

The loop is comprised of two four-bar hypermeasures.

The elder delivers his instructions: the player is to recover a pendant from the despotic

boss in a nearby dungeon. The player travels to this dungeon, and upon entering, hears the music

in Example 11.

[Example 11]

Here, we encounter the longest, most elaborate introduction in the game. The low and

brooding melody doesn't take on metrical qualities until measure nine. Even then, the beat is not

easily discerned immediately. In measure ten, the hypermeter begins. It remains constantly

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13 Nintendo, *Super Mario Bros.*

throughout a twelve-bar sequence. Like Example 5, this bears some resemblance to a twelve-bar blues.

If the player is unlucky (or unskilled), he may expect to hear this track for a totality of several hours, all the while hacking his way through a complex and challenging dungeon area. Exhausted, he may eventually emerge into the boss chamber, hearing as he does so the music in Example 12.

[Example 12]

There are some similarities between this music and the music in Example 9: there is a panicked introduction (a little longer, this time) and an eight-bar loop featuring harmonies which alternate uneasily. The bass line arpeggiates the chords, but it omits the third as it does so.

If the player wins, he is rewarded with the pendent (and a cheerful little victory sound which isn't included here). Feeling terrific, he ventures out of the dungeon and returns the pendant to the wise man. It's at this point that the game really first begins to reuse musical material—or, to better state the situation, the limits of storage capabilities in the memory of the Super Nintendo cartridge (and the exploratory aspect of the game itself, which causes the player to revisit areas) begin preventing the composer from creating more material. The programmers of LTTP only had 8 megabytes to work with. This may be a pittance by today's standards, but at the time, it was significantly more than was usual.[14] Areas are re-traversed as the player is urged to acquire two more pendants from other dungeons. Perhaps he will choose to explore some of the smaller buildings scattered throughout the Light World. In doing so, he may come across a mini-game area, hearing the music in Example 13.

[Example 13]

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14 "The Greatest Games of All Time: The Legend of Zelda: A Link to the Past", Gamespot.

These mini-games are simple tests of timing, ability or luck. The player may choose a chest at random in the hopes of finding treasure, shoot an arrow at a moving target, or complete another task. Each optional mini-game takes as much or as little time as the player wishes to spend playing it. When the player enters the building, a three-measure introduction lets him or her know he has entered a mini-game area; then, a four-bar hypermeter is established, and kept constant throughout a thirty-two bar loop. This loop is very symmetrical. Easily, one could mentally re-notate it as four eight-bar hypermeasures. Less easily, it could be re-notated as sixteen-bar hypermeasures. By a stretch of the intellect, it could conceivably be re-notated as a single thirty-two bar hypermeasure—such is the speculation invoked by hierarchical symmetry.

Later, the player may happen upon another building, one which contains a "fortune-teller". These humorous characters will "tell the future" for a fee. Functionally, they recommend the confused player where he should go or what he should do next. The music accompanying this fortune-telling is shown in Example 14.

[Example 14]

An unusual triple hypermeter may be noted. Each hypermeasure contains three 4/2 measures. The boundaries of each hypermeasure aren't created by melodic or harmonic changes, but by a change in texture: beginning at measure four, a faintly percussive, hemiolic line enters in the high register for three measures, before looping back to measure one. Appropriately, the effect is off-putting.

The player may now venture north into an expansive and labyrinthine forest, hearing as he does so the music in Example 15. Here, within a twelve-bar loop, four-bar hypermeasures are again created. The track is short; it may be reasonable to further imagine this re-notated as a single twelve-bar hypermeasure.

[Example 15]

Now, the player has explored most of the Light World. He has completed the second dungeon, which used the same music as the first. He is on his way to reach the third dungeon on top of a mountain. Before reaching the dungeon, however, a strange event occurs—he finds himself suddenly and accidentally transported to an unfamiliar place. It appears to be another dimension of sorts, a shadowy other-world which resembles the Light World, but which is perpetually cloaked in darkness. The character also finds he has turned into a gray bunny. The player consults one of the world's other residents, a twisted, evil-looking, pumpkin-headed man. The man tells him that everyone who visits the "Dark World" is turned into a shape which best represents the state of their heart. The pumpkin-headed man is himself eternally kicking around a soccer ball—this turns out to be the form of another man, who laments he could "never make up his mind about anything". This bizarre and unexpected scene is accompanied by the music in Example 16.

[Example 16]

The harmonies are static. A hypermeter is established, and remains constant through measure sixteen. At measure seventeen, another four-bar hypermeasure begins, but its interrupted in measure eighteen by the end of the loop. So, the third beat of this last hypermeasure becomes reinterpreted as the first beat of the opening hypermeasure, and the fourth of the last becomes the second of the first.

To retain one's shape in this other world, the player is informed, one must find a certain precious jewel found in the third dungeon. At this point, the player may remember a mysterious, seemingly useless "magic mirror" which was picked up earlier in the game. He selects it for use. Instantly, the character is transported back into the Light World in a position which corresponds

to his exact location in the Dark World. The worlds are shown to be parallel, or identical—in order to reach some areas in one, the player must reach certain areas in the other. This challenge becomes important as the game progresses, and the player will eventually be expected to master this technique. For now, though, he enters the dungeon, and hears the music in Example 17.

[Example 17]

Here, the transcription reveals something subtle: The opening four bars are a near-perfect restatement of the harmonic material in Example 9. This time, the loop is longer, and the material is more complex. The harmonies in this track are amongst the least triadic in the soundtrack. Occasionally, they become difficult to interpret tonally—the chords shown in Example 17 provide a rough outline of one such interpretation. The hypermeter is also more complex. It begins at the onset of the introduction, and continues through measure sixteen. In measure seventeen, another hypermeasure begins, but an agogic and harmonic emphasis on measure twenty cause the fourth beat of this hypermeasure to be reinterpreted as the first beat of a new one. The same phenomenon happens in measure twenty-three: the four-bar hypermeasure beginning at twenty is interrupted by the onset of a new hypermeasure. Then, the hypermeter resumes its normal course: measures twenty-three through thirty represent a return to the opening hypermeter, and the track loops back to measure five.

The character navigates the character through the dungeon. Eventually, he finds a chest containing a large pearl. This is good news: now, he can safely traverse the Dark World in the form of a human being. The player confronts the boss, again hearing the music in Example 12. He triumphs, and exits the dungeon.

At this point, the player may decide to reenter the Dark World. Lifting up a rock conspicuously placed outside the dungeon entrance, a glowing portal is revealed. The character is

transported back to the strange area, this time in human form, and the player is treated to the new music in Example 18.

[Example 18]

There is a one-bar introduction. The hypermeter begins at the beginning and continues steadily through measure twenty-four. In measure twenty-five, the final hypermeasure begins. But, it's cut off by the apparent beginning of a new hypermeasure at measure twenty-eight. This new hypermeasure continues as the music loops back to measure two, three and four. The fourth beat of the final hypermeasure is reinterpreted as the first beat of the first hypermeasure.

This music bears some similarity to Example 4. The contour of the melody seems familiar. There is a tonic C in measure five which moves down to a G on the fourth eighth note of that measure. The interval is again emphasized in measure six. This interval of a fourth, moving downward from the tonic to the fifth of the chord, is also featured in Example 4 (i.e. measures seven and eight). The hypermetrical structure is also similar: both tracks are comprised of four-bar hypermeasures, where the last beat of the last hypermeasure is reinterpreted as the first beat of the first hypermeasure. The only other place where this occurs in the soundtrack is in Example 8.

This similarity seems to become more important in light of the game narrative. This area, the mountain in the Dark World, is revisited at the end of the game when the player travels to the final dungeon. The soundtrack provides a "book-end" for itself; the music accompanying the approach to the last dungeon may be interpreted as a loose variation upon the theme of the first dungeon.

After emerging back into the Light World and checking his map, the player is urged to recover and possess the "Master Sword". Apparently, this is an all-powerful weapon intended

only for the hero of legend. It resides in the forest, thrust deep into a magic boulder. Excited, the player leads the character through the trees to a hidden grove. He pulls the gigantic sword from the boulder with a long musical flourish. There is silence, as the character holds up the sword, and another telepathic message is received: it is time to confront the antagonist, who has been the root cause of all the recent troubles. The forest music in Example 15 is replaced by the music in Example 7, and never heard again. The player revisits the castle where the game began, navigating a new and more complex maze. The music from Example 4 is heard. As the character approaches a long ramp leading to his first confrontation with the antagonist, he hears the music in Example 19.

[Example 19]

Hypermeter plays little role here. The first eight measures may be interpreted as two four-bar hypermeasures, but this apparent hypermeter is destroyed by a gradual accelerando from measures nine to seventeen. The music then loops back to measure one.

The player confronts the antagonist—technically, the alter-ego of a larger, truer antagonist which will be later revealed—and hears the boss music in Example 12. Then, as the character is about to deliver the final blow, he is suddenly whisked off to the Dark World by this antagonist's magic powers. In silence, the character receives another telepathic message: retrieve seven crystals dispersed throughout this world, each of which contains the soul of a captured maiden. The hero's work, it seems, is never done. With a sigh, perhaps, the player sets off to explore this newfound universe. As he does so, he hears the music in Example 20.

[Example 20]

This portion of the game is, in effect, the entire second half of the game experience. It is significant in its scope and difficulty. This Dark World music is likely to be heard for the totality

of several hours. Maybe for this reason, Kondo chose to design it with a higher degree of hypermetrical complexity than most of the other music in LTTP. Like the subtle reinterpretations in Example 17, different interpretations may be on equal footing in determining this track's hypermetrical content; one will be chosen here which is consistent in approach with the other analyses presented.

A hypermeter is immediately implied at the onset of the track. There is a four-bar hypermeasure. Measures five through eight represent the continuation of this implied hypermeter, but the simplicity does not last: this hypermeasure feels as if it is is prolonged by two beats in measures nine and ten. This interpretation is suggested by the harmonic material in measures nine and ten. Without these two bars, measure eight would still lead smoothly to measure eleven. The phenomenon occurs again when measures five through ten are repeated (in measures eleven through sixteen). Measures fifteen and sixteen may be seen as parenthetical because, without them, measure twelve would still lead smoothly to measure seventeen.

Measures seventeen through twenty represent another four-bar hypermeasure. Then, measures twenty-one through twenty-six appear to represent a return to the hypermetrical pattern described above. This time, however, the interpretation is intuited because of the melodic similarities, not harmonic ones. The melody in measures twenty-one through twenty-six is similar to the material in measures five through ten and eleven through sixteen. The harmonies here do not necessarily suggest an identical interpretation. If one were to remove measures twenty-five and twenty-six, the D7 in measure twenty-four would not lead well to the Abmaj7 in measure twenty-seven. In the end, the melody wins out. The alternative solution (merely labeling measures five through ten a six-beat hypermeasure, and doing the same for measures eleven through sixteen and twenty-one through twenty-six) is not as satisfactory.

There are aspects of Example 20 which seem familiar. In Example 18, Kondo chose to alternate the fourth large beats of many measures between a duple and a triple figure. Listening carefully to the Example 20, one can hear this idea developed. Notice the part of the snare drum: from measures one to sixteen, the fourth beats of every measure are comprised of four sixteenth notes. From measures seventeen to twenty-six, the same figure is repeated with triplets on the fourth beat. From measures twenty-seven to thirty-four, the second beats utilize sixteenth notes and the fourth beats utilize triplets.

Such details suggest that the battle between an emphasis on duple and triple hypermeasures in Example 20—indeed, throughout the soundtrack—may be based on an elaborate logical underpinning. One may remember other similar tensions: Example 1, which places 4/4 alongside 3/4; Example 8, which alternates between 3/4 and 6/8; Example 14, which utilizes three-bar hypermeasures in the context of a duple meter.

The player finds himself laboriously playing through seven lengthy, complex dungeons. By now, he has heard most of the music previously discussed dozens of times. The dungeon tracks have become engrained in the player's mind, as have the Light and Dark World music. Seven damsels have been freed from their crystalline prisons. The player journeys northward to the final castle of the antagonist, hearing as he does so the music in Example 18.

 He battles his way through this final castle, confronting and defeating the antagonist's alter-ego (a wizard which has been causing mischief for the protagonist and his allies). Eventually, he finds his way to the final boss battle. The music for this sequence, which may be seen in Example 21, represents the height of rhythmic complexity in the game.

[Example 21]

It becomes immediately obvious that the meter is irregular. But, because of the breakneck

speed at which this loop is taken, it's not obvious what that meter actually is. A careful transcription again pays dividends: the meter is shown to be 7/4. There are two seven-bar hypermeasures. The first is established from measures four to ten, the second from measures eleven to seventeen. Once created, this strange hypermeter is then brutally destroyed: measures eighteen through twenty feature rhythmic content which is syncopated to the brink of incomprehension, causing even a careful listener to become momentarily disoriented.

The previous observation about duple-triple tensions in this soundtrack may be relevant here. By writing the final boss track in 7/4, and then by organizing the music in hypermeasures of seven bars each, Example 21 brings this tension to a climax. The listener will create aural groups of four and three in each measure and hypermeasure. Here, the duple and triple meters aren't so much coexisting as they are locked in perpetual struggle.

Finally, the player beats the final boss. He moves onto a chamber which opens in the back of the room. A long ending sequence begins, where more of the back story is explained. The character is given an opportunity (which he of course takes) to reverse the evils done by the antagonist. The music for the first part of this sequence is shown in Example 22.

[Example 22]

There is a brief introductory flourish. The looped portion of the track begins in measure three. It begins in 7/4. A faint, barely distinguishable hypermeter begins. This hypermeter, comprised of two-bar hypermeasures, lasts from measure three to measure eight. In measure nine, the meter briefly switches to 4/4, but this is almost an accident of duration—there is little subdivision of the beat. In measure eleven, a stronger 3/4 meter emerges. A four-bar hypermeasure lasts until measure fourteen, and another begins at measure fifteen. This second hypermeasure does not last, however; from measure seventeen to measure eighteen, there is a

brief accelerando and an even briefer rallentando, before the music loops back to measure three.

The music in Example 22 seems to function like a slowed-down version of the music in Example 21. Much of it remains in 7/4. Whereas Example 21 ends with three bars of 7/4, Example 22 ends with a section in 3/4. In Example 22, there is the remnant of the duple-triple tension, but the energy of their disagreement has been dissipated. This final track, if one is feeling poetic, may be interpreted as a reconciliation of these forces. The player has beaten the game.

A few points should be written about the potential consolidation and summarization of this data. First, the usefulness of track comparisons should be noticed. It may be possible to observe still more, undiscovered hypermetrical patterns by comparing tracks against each other in a systematic fashion. Example 23 demonstrates the ambition of such an undertaking.
[Example 23]

Without pretending to approach the comprehensiveness of that approach, a few summaries of the data may be attempted. These summaries are of variable usefulness. In Example 24, a listing of the time signatures employed in the tracks presented has been made. Obviously, the meter of each Example is partially determined by the method of notation.
[Example 24]

Some patterns may be noticed about the time signatures. The majority of looped content in LTTP does not feature sudden metrical changes. Nineteen of the twenty-two loops chosen for analysis here maintain the same meter throughout. A similarly-sized majority of the loops are written in 4/4 or an analogous meters—only three loops conspicuously utilize 3/4 or 6/8, and only the last two utilize 7/4. Information about the number of measures and hypermeasures in each track, contained in Example 25, may also be instructive.

[Example 25]

Looking at this list, one may notice how certain apparently prominent musical phenomena actually comprise only small minorities within the soundtrack. Out of twenty-two loops, only five feature overlapping hypermeasures. Although the twelve-bar blues appears to have some influence on the music in LTTP, only five loops feature either twelve measures or a number of measures divisible by twelve.

Example 26 lists three variables: which tracks contain a non-looped introduction of some kind, which tracks feature the onset of the hypermeter within the introduction, and which introductions contain at least one complete hypermeasure.

[Example 26]

These introductions have a big impact on the music they accompany, but most of them don't affect the hypermeter. Of the twenty-two tracks discussed here, sixteen contain an introduction of some kind. Of these introductions, about half (nine) feature the onset of the hypermeter. Only half of those introductions (five) contain one full hypermeasure.

Going further, one may look at the loops and create larger hypermeasures by grouping together some of the hypermeasures already established. Example 27 attempts to accomplish this.

[Example 27]

In this list, the large hypermeasures are described in terms of the number of ordinary beats they encompass. If no larger hypermeasures can be made—as is the case with many of these tracks—the looped content may simply be described as being comprised of a single large hypermeasure. Such an abbreviation is included primarily for completeness. It doesn't suggest that such an interpretation practically represents the musical experience of every loop, only that

no smaller large-hypermeasure could be created.

In cases where one is tempted to label those large hypermeasures which do not perfectly describe the entirety of the looped content, such calculations are labeled in Example 27 as "imperfect". Briefly, these designations may defended.

In Example 4, there may be larger hypermeasures heard from measures seven to fourteen, fifteen to twenty-two, twenty-three to thirty, thirty-one to thirty-eight, and thirty-nine to forty-six despite the ambiguity created by measures four through six.

In Example 8, there may be larger hypermeasures heard from measures five to twelve, thirteen to twenty, twenty-one to twenty-eight, twenty-nine to thirty-six, thirty-seven to forty-four, and forty-five to fifty-two despite the ambiguity created by measures two through four. Alternatively, in Example 8, there may be still larger hypermeasures heard from measures five to twenty, twenty-one to thirty-six, and thirty-seven to fifty-two despite the ambiguity created by measures two through four.

In Example 16, there may be larger hypermeasures heard from measures one to eight and nine to sixteen despite the ambiguity created by measures seventeen and eighteen. In Example 18, there may be larger hypermeasures heard from measures five to twelve, thirteen through twenty, and twenty-one to twenty-eight despite the ambiguity created by measures two through four.
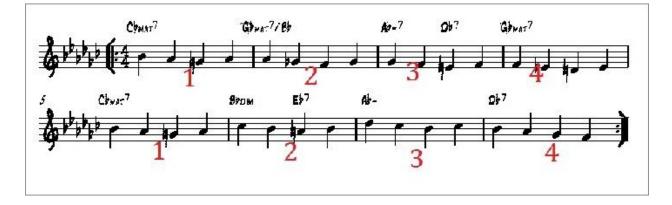
Finally, in re-notating these tracks using such large hypermeasures, one would be obliged to reduce these time signatures wherever possible. Example 28 attempts to make such a reduction in each of these cases, reducing time signatures such as 24/4 to 6/1, 16/4 to 4/1, etc.
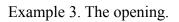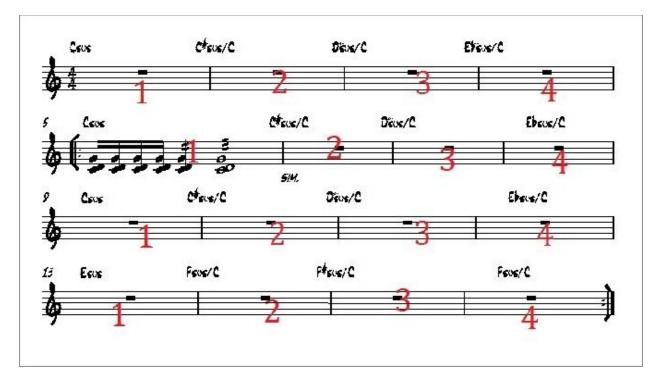[Example 28]

Examples

Example 1. Prologue.

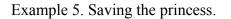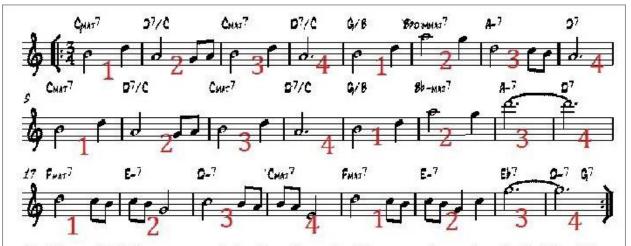Example 2. Select screen, or Fairy.

Example 3. The opening.

Example 4. Castle.

Example 5. Saving the princess.
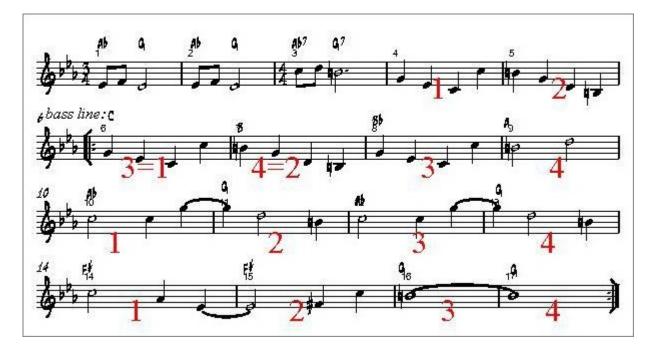

The Princess Zelda theme appears in two forms throughout the game: a longer form, the first time (when the player releases Princess Zelda from the Hyrule Castle), which includes measures 17-24; a shorter form, every other time (when the player releases a lesser-princess from each of the crystals in the Dark World), with different instrumentation, which does not include measures 17-24. Additionally, each arrangement begins with a different introductory flourish. The recording included with this paper represents the first manifestation of this theme.

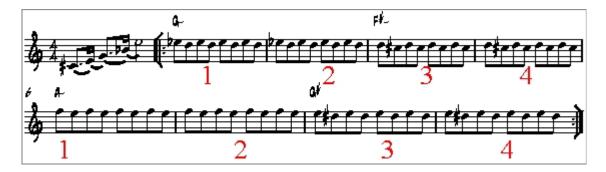Example 6. Sanctuary.

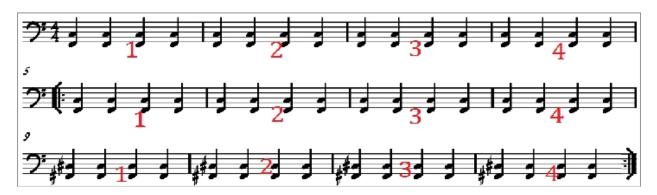Example 7. The Light World.

Example 8. Kakariko Village.

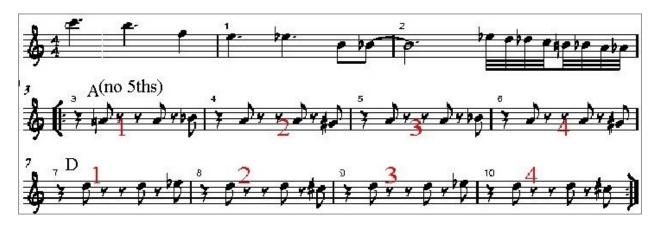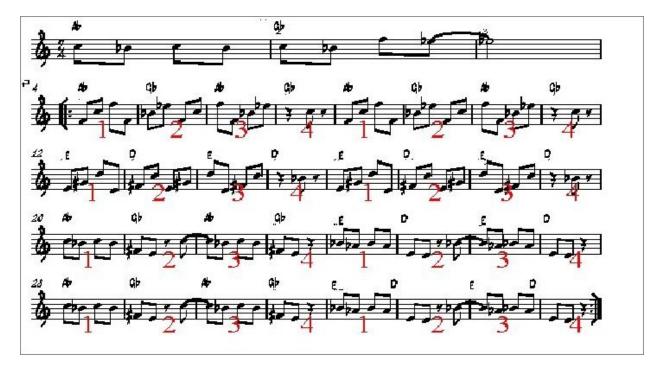Example 9. Sudden appearance of an enemy.

Example 10. Cave.
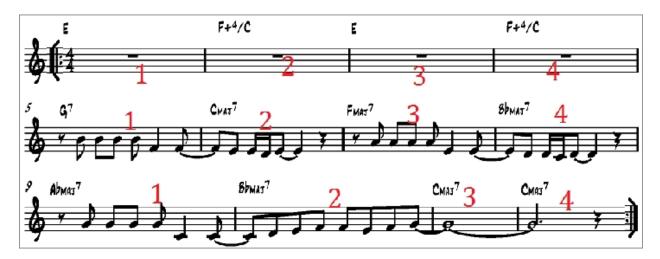

Example 11. Dungeon #1.
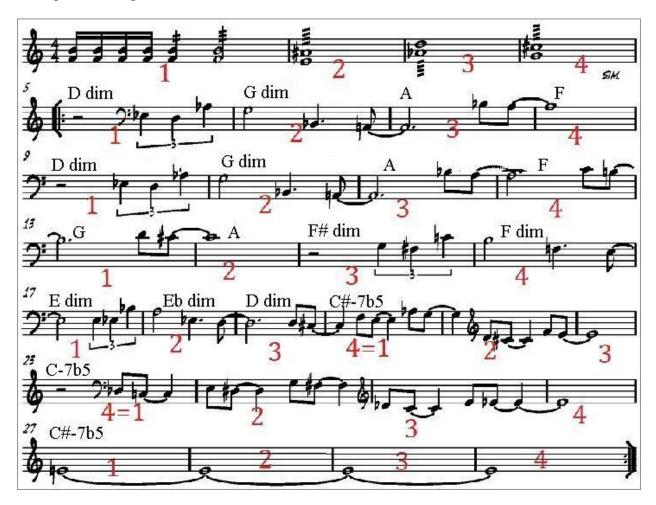
Example 12. Boss.

Example 13. Mini-game.

Example 14. Fortune-teller.
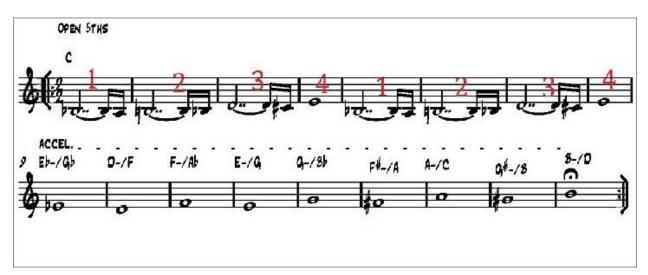

Example 15. Forest.

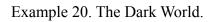Example 16. The dark mountain as a rabbit.

Example 17. Dungeon #2.

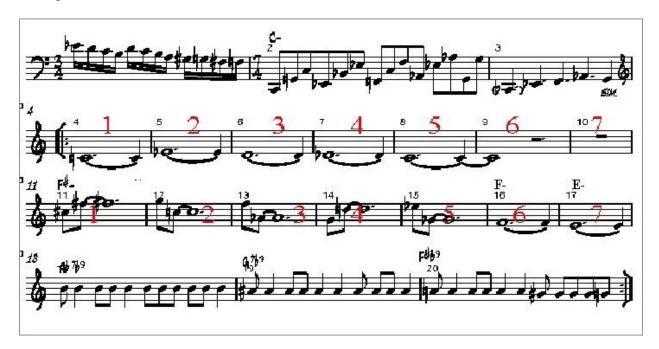Example 18. The dark mountain as a human being.
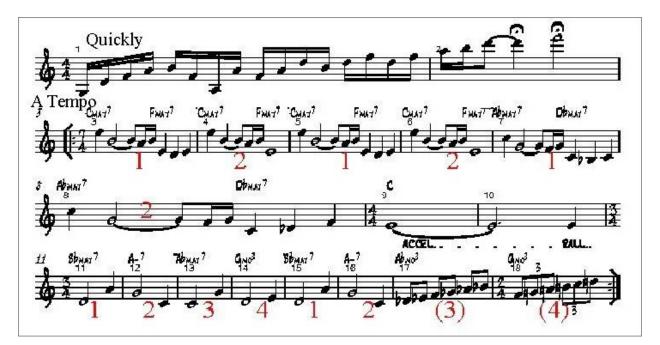
Example 19. Approaching the antagonist's alter-ego.

Example 20. The Dark World.

Example 21. The final boss battle.

Example 22. Mission accomplished.

Example 23. Comparisons which could be made between the tracks presented.

Within the set of looped tracks selected for this paper [from "The Legend of Zelda: A Link to the Past"] more than 200 comparisons could be made (231 by this count, ordered arbitrarily).

[Track #1] v. [Track #2]

[Track #1] v. [Track #2]				
	[3][10]	[6][17]	[10][21]	[18][19]
	[3][11]	[6][18]	[10][22]	[18][20]
	[3][12]	[6][19]	[11][12]	[18][21]
	[3][13]	[6][20]	[11][13]	[18][22]
	[3][14]	[6][21]	[11][14]	[19][20]
	[3][15]	[6][22]	[11][15]	[19][21]
	[3][16]	[7][8]	[11][16]	[19][22]
	[3][17]	[7][9]	[11][17]	[20][21]
	[3][18]	[7][10]	[11][18]	[20][22]
	[3][19]	[7][11]	[11][19]	[21][22]
	[3][20]	[7][12]	[11][20]	
	[3][21]	[7][13]	[11][21]	
[1][3]	[3][22]	[7][14]	[11][22]	
[1][4]	[4][5]	[7][15]	[12][13]	
[1][5]	[4][6]	[7][16]	[12][14]	
[1][6]	[4][7]	[7][17]	[12][15]	
[1][7]	[4][8]	[7][18]	[12][16]	
[1][8]	[4][9]	[7][19]	[12][17]	
[1][9]	[4][10]	[7][20]	[12][18]	
[1][10]	[4][11]	[7][21]	[12][19]	
[1][11]	[4][12]	[7][22]	[12][20]	
[1][12]	[4][13]	[8][9]	[12][21]	
[1][13]	[4][14]	[8][10]	[12][22]	
[1][14]	[4][15]	[8][11]	[13][14]	
[1][15]	[4][16]	[8][12]	[13][15]	
[1][16]	[4][17]	[8][13]	[13][16]	
[1][17]	[4][18]	[8][14]	[13][17]	
[1][18]	[4][19]	[8][15]	[13][18]	
[1][19]	[4][20]	[8][16]	[13][19]	
[1][20]	[4][21]	[8][17]	[13][20]	
[1][21]	[4][22]	[8][18]	[13][21]	
[1][22]	[5][6]	[8][19]	[13][22]	
[2][3]	[5][7]	[8][20]	[14][15]	
[2][4]	[5][8]	[8][21]	[14][16]	
[2][5]	[5][9]	[8][22]	[14][17]	
[2][6]	[5][10]	[9][10]	[14][18]	
[2][7]	[5][11]	[9][11]	[14][19]	
[2][8]	[5][12]	[9][12]	[14][20]	
[2][9]	[5][13]	[9][13]	[14][21]	
[2][10]	[5][14]	[9][14]	[14][22]	
[2][11]	[5][15]	[9][15]	[15][16]	
[2][12]	[5][16]	[9][16]	[15][17]	
[2][13]	[5][17]	[9][17]	[15][18]	
[2][14]	[5][18]	[9][18]	[15][19]	
[2][15]	[5][19]	[9][19]	[15][20]	
[2][16]	[5][20]	[9][20]	[15][21]	
[2][17]	[5][21]	[9][21]	[15][22]	
[2][18]	[5][22]	[9][22]	[16][17]	
[2][19]	[6][7]	[10][11]	[16][18]	
[2][20]	[6][8]	[10][12]	[16][19]	
[2][21]	[6][9]	[10][13]	[16][20]	
[2][22]	[6][10]	[10][14]	[16][21]	
[3][4]	[6][11]	[10][15]	[16][22]	
[3][5]	[6][12]	[10][16]	[17][18]	
[3][6]	[6][13]	[10][17]	[17][19]	
[3][7]	[6][14]	[10][18]	[17][20]	
[3][8]	[6][15]	[10][19]	[17][21]	
[3][9]	[6][16]	[10][20]	[17][22]	

Example 24. Time signatures in the looped material presented.

```
#1: 4/4, 3/4
#2: 4/4
#3: 4/4
#4: 4/4
#5: 3/4
#6: 4/4
#7: 4/4
#8: 3/4, 6/8
#9: 4/4
#10: 4/4
#11: 4/4
#12: 4/4
#13: 2/4
#14: 4/2
#15: 4/4
#16: 4/4
#17: 4/4
#18: 12/8
#19: 2/2
#20: 4/4
#21: 7/4
#22: 7/4, 4/4, 3/4
```

Example 25. The number of looped measures and hypermeasures in the tracks presented.

```
#1: 32 measures, 8 hypermeasures (none overlapping)
#2: 8 measures, 2 hypermeasures (none overlapping)
#3: 12 measures, 3 hypermeasures (none overlapping)
#4: 44 measures, 11 hypermeasures (1 overlapping)
#5: 24 measures, 6 hypermeasures (none overlapping)
#6: 12 measures, 3 hypermeasures (none overlapping)
#7: 20 measures, 5 hypermeasures (none overlapping)
#8: 52 measures, 13 hypermeasures (1 overlapping)
#9: 8 measures, 2 hypermeasures (none overlapping)
#10: 8 measures, 2 hypermeasures (none overlapping)
#11: 12 measures, 3 hypermeasures (none overlapping)
#12: 8 measures, 2 hypermeasures (none overlapping)
#13: 32 measures, 8 hypermeasures (none overlapping)
#14: 6 measures, 2 hypermeasures (none overlapping)
#15: 12 measures, 3 hypermeasures (none overlapping
#16: 18 measures, 5 hypermeasures (1 overlapping)
#17: 26 measures, 7 hypermeasures (2 overlapping)
#18: 28 measures, 7 hypermeasures (1 overlapping)
#19: 17 measures, 2 hypermeasures (none overlapping)
#20: 34 measures, 7 hypermeasures (none overlapping)
#21: 17 measures, 2 hypermeasures (none overlapping)
#22: 16 measures, 5 hypermeasures (none overlapping)
```

Example 26. Which loops are accompanied by non-looped introductions / which introductions feature the onset of the hypermeter / which contain [at least] one complete hypermeasure.

```
#1: yes / yes / yes
#2: no / no / no
#3: yes / yes / yes
#4: yes / yes / no
#5: yes / no / no
#6: yes / yes / no
#7: yes / yes / yes
#8: yes / yes / no
#9: yes / no / no
#10: yes / yes / yes
#11: yes / no / no
#12: yes / no / no
#13: yes / no / no
#14: no / no / no
#15: no / no / no
#16: no / no / no
#17: yes / yes / yes
#18: yes / yes / no
#19: no / no / no
#20: no / no / no
#21: yes / no / no
#22: yes / no / no
```

Example 27. Larger hypermeasures which may be created by the looped material.

```
#1: 4 (2 in 32/4 and 2 in 24/4) or 2 (1 in 64/4 and 1 in 48/4) or 1 (in 112/4)
#2: 1 (in 32/4)
#3: 1 (in 48/4)
#4: 5 (in 32/4, imperfect) or 1 (in 172/4)
#5: 3 (in 24/4) or 1 (in 72/4)
#6: 1 (in 48/4)
#7: 1 (in 80/4)
#8: 6 (in 24/4, imperfect) or 3 (in 48/4, imperfect) or 1 (in 153/4)
#9: 1 (in 32/4)
#10: 1 (in 32/4)
#11: 1 (in 48/4)
#12: 1 (in 32/4)
#13: 4 (in 16/4) or 2 (in 32/4) or 1 (in 64/4)
#14: 1 (in 24/2)
#15: 1 (in 48/4)
#16: 2 (in 32/4, imperfect) or 1 (in 66/4)
#17: 1 (in 104/4)
#18: 3 (in 32/4, imperfect) or 1 (in 112/4)
#19: 1 (in 34/2)
#20: 1 (in 136/4)
#21: 1 (in 119/4)
#22: 1 (in 73/4)
```

Example 28. Representing the larger hypermeasures using reduced time signatures.

```
#1: 4 (2 in 8/1 and 2 in 6/1) or 2 (1 in 16/1 and 1 in 12/1) or 1 (in 28/1)
#2: 1 (in 8/1)
#3: 1 (in 12/1)
#4: 5 (in 8/1, imperfect) or 1 (in 43/1)
#5: 3 (in 6/1) or 1 (in 18/1)
#6: 1 (in 12/1)
#7: 1 (in 20/1)
#8: 6 (in 6/1, imperfect) or 3 (in 12/1, imperfect) or 1 (in 153/4)
#9: 1 (in 8/1)
#10: 1 (in 8/1)
#11: 1 (in 12/1)
#12: 1 (in 8/1)
#13: 4 (in 4/1) or 2 (in 8/1) or 1 (in 16/1)
#14: 1 (in 12/1)
#15: 1 (in 12/1)
#16: 2 (in 8/1, imperfect) or 1 (in 33/2)
#17: 1 (in 26/1)
#18: 3 (in 8/1, imperfect) or 1 (in 28/1)
#19: 1 (in 17/1)
#20: 1 (in 34/1)
#21: 1 (in 119/4)
#22: 1 (in 73/4)
```

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